IN THE CLAIMS

Please cancel claim 10 without prejudice or disclaimer, amend claims 3, 6 thru 9 and 11, and add claim 12, as follows:

Claims 1 and 2. (Canceled)

3 (currently amended). A redundant array of inexpensive disks level 5 memory system, comprising:

a plurality of defect-adaptive memory devices, each of said plurality of defect-adaptive memory devices having a first region for sequentially storing parity information for data recovery and a second region for storing data, with the parity information needed for data recovery being stored and sequentially arranged from the most outer cylinder on a recording medium in each corresponding one of said plurality of defect-adaptive memory devices;

a plurality of caches, each of said plurality of caches being respectively coupled operatively to a corresponding single unique one of said plurality of defect-adaptive memory devices, each of said plurality of caches being adapted for storing parity information for data recovery for a corresponding single unique one of said plurality of defect-adaptive memory devices to provide one-to-one caching; and

a controller operatively coupled to each defect-adaptive memory device of said plurality of defect-adaptive memory devices and to each corresponding single unique cache of said plurality of caches, said controller selectively controlling writing and reading of parity

information needed for data recovery in said first region of each corresponding single unique one of said plurality of defect-adaptive memory devices, selectively obtaining parity information needed for data recovery from said first region of each corresponding single unique one of said plurality of defect-adaptive memory devices, and selectively storing parity information needed for data recovery obtained from said first region of a corresponding single unique one of said plurality of defect-adaptive memory devices in a predetermined corresponding single unique one of said plurality of caches.

4 (previously presented). The memory system of claim 3, wherein parity information for data recovery is modified to a value obtained through a calculation of new data recovery information.

5 (previously presented). The memory system of claim 4, wherein parity information for data recovery is obtained by performing an exclusive-OR operation on previous data, parity information corresponding to the previous data, and new data.

6 (currently amended). A redundant array of inexpensive disks (RAID) level 5 system, comprising:

a plurality of disk drives, each of said plurality of disk drives including a first region having a plurality of data blocks for storing data and a second region having a predetermined number of parity blocks for storing parity information for data recovery, with

the parity information needed for data recovery [[is]] being stored and [[is]] sequentially arranged from the most outer cylinder on a recording medium in each corresponding one of said plurality of defect-adaptive memory devices;

a plurality of caches, each of said plurality of caches being respectively coupled operatively to a corresponding single unique one of said plurality of disk drives, each of said caches being adapted for storing parity information for data recovery; and

a controller adapted to provide one-to-one caching, said controller being operatively coupled to each disk drive of said plurality of disk drives and to each corresponding single unique cache of said plurality of caches, said controller being adapted for selectively controlling a write operation of data and parity information for a data recovery in each corresponding disk drive of said plurality of disk drives, said controller comprising:

[[a]] first means for selecting a single predetermined disk drive of said plurality of disk drives upon receipt of a data writing instruction from a host computer;

[[a]] second means for reading old data from the single predetermined disk drive of said plurality of disk drives;

[[a]] third means for determining whether old parity information corresponding to the old data corresponding to the single predetermined disk drive of said plurality of disk drives is accessed in a corresponding single unique cache of said plurality of caches;

[[a]] fourth means for reading the old parity information from the single predetermined disk drive of said plurality of disk drives, upon the old parity

information corresponding to the single predetermined disk drive of said plurality of disk drives not being accessed in the corresponding single unique cache of said plurality of caches, and for then loading the corresponding single unique cache of said plurality of caches with the old parity information;

H1 [[a]] fifth means for obtaining new parity information by performing an exclusive OR operation on the old data, the old parity information and new data;

[[a]] sixth means for loading the corresponding single unique cache of said plurality of caches with the new parity information; and

[[a]] seventh means for writing the new data in said region for storing data in the single predetermined disk drive of said plurality of disk drives, and for writing the new parity information in said another region for storing parity information in the predetermined single disk drive of said plurality of disk drives, whereby the data writing process is completed.

7 (currently amended). In a method of writing data to, and reading data from, a redundant array of inexpensive disks (RAID) level 5 system, said method comprising steps for sequentially storing information for data recovery in a first region of a disk ~~with the parity information needed for data recovery stored and sequentially arranged from the most outer cylinder on a recording medium in each corresponding one of said plurality of defect-adaptive memory devices~~, storing information comprising data in a second region of the disk other than the first region, controlling writing and reading of information by means of an electronic

controller unit, and caching information for data recovery[[,]];

the improvement comprising a step for reducing overhead during a read operation for data recovery and thereby improving data input-output performance, wherein the parity information needed for data recovery is stored and sequentially arranged from the most outer cylinder on a recording medium in each corresponding one of said plurality of defect-adaptive memory devices.

8 (currently amended). The method of claim 7, wherein said step for reducing overhead during a read operation for data recovery and thereby improving data input-output performance comprises steps for:

(a) coupling each one of a plurality of caches to each corresponding one of a plurality of disks, whereby each disk is coupled one-to-one to one cache;

(b) operatively coupling the caches to the controller;

(c) storing, in each one of the plurality of caches, information for data recovery in the disk corresponding to the cache; and

(d) determining information for data recovery in a disk by using information for data recovery stored in the cache corresponding to the disk.

9. (currently amended) A redundant memory system, comprising:

a plurality of defect-adaptive memory devices disposed in a redundant array of inexpensive disks accommodating storage of data and parity information representative of the

data per sector across all of said memory devices within said array, with each of said plurality of memory devices having a first ~~and most readily accessible~~ region disposed to sequential store the parity information in sequential arrangement in said first region, and a second region for storing the data;

a plurality of caches, each of said plurality of caches being respectively coupled operatively to a corresponding single unique one of ~~saidmemory~~ said memory devices to store the parity information for the corresponding single unique one of said memory devices; and

a controller operatively coupled to each defect-adaptive memory device of said plurality of defect-adaptive memory devices and to each corresponding single unique cache of said plurality of ~~caches,selectively~~ caches, for selectively controlling writing and reading of parity information needed for data recovery in said first region of each corresponding single unique one of said plurality of defect-adaptive memory devices;

wherein said first region comprises a most outer cylinder of a recording medium in each corresponding one of said memory devices.

Claim 10. (Canceled)

11. (currently amended) The memory system of claim 9, ~~comprised of said controller~~ wherein:

said controller selectively ~~obtaining~~ obtains parity information needed for data recovery from said first region of each corresponding single unique one of said plurality of defect-

adaptive memory devices[[,]]; and

said controller selectively ~~storing~~ stores parity information needed for data recovery obtained from said first region of a corresponding single unique one of said plurality of defect-adaptive memory devices in a predetermined corresponding single unique one of said plurality of caches.

12. (New) A redundant memory system, comprising:

a plurality of defect-adaptive memory devices disposed in a redundant array of inexpensive disks accommodating storage of data and parity information representative of the data per sector across all of said memory devices within said array, with each of said plurality of memory devices having a first region disposed to sequential store the parity information in sequential arrangement in said first region, and a second region for storing the data;

a plurality of caches, each of said plurality of caches being respectively coupled operatively to a corresponding single unique one of said memory devices to store the parity information for the corresponding single unique one of said memory devices; and

a controller operatively coupled to each defect-adaptive memory device of said plurality of defect-adaptive memory devices and to each corresponding single unique cache of said plurality of caches, for selectively controlling writing and reading of parity information needed for data recovery in said first region of each corresponding single unique one of said plurality of defect-adaptive memory devices;

wherein said controller selectively obtains parity information needed for data

recovery from said first region of each corresponding single unique one of said plurality of defect-adaptive memory devices; and

wherein said controller selectively stores parity information needed for data recovery obtained from said first region of a corresponding single unique one of said plurality of defect-adaptive memory devices in a predetermined corresponding single unique one of said plurality of caches.